

Supervisory General Engineer, GS- 0801-15

AST- Engineering Program Management, NCC: 770-60

Position Number: GS05A42

Introductory Statement: As a Supervisory Deputy Program Manager in the Flight Programs and Projects Directorate the incumbent serves under the Associate Director/Program Manager. The incumbent's work includes program and project planning, development, analysis, and forecasting; analyzing and managing program and project resources, objectives, and schedules; preparing overall reports, including technical, budget, and schedule; and presenting and defending these to top center/agency management. Duties also include monitoring contractors engaged in this work. The following major duty areas comprise tasks and duties directly related to AST-Engineering Program Management work, NCC 770-60, as described in the AST Definition for that specialty level. The specialty knowledge described in the definition is needed to perform the duties of this job in addition to the knowledge described below.

Engineering Program Management for NASA 30%

Serves as an expert consultant in the management and administration of programs or projects of national or international significance, characterized by constantly, and sometimes greatly changing physical environment, critical problems, or other similar variables and unknowns. Programs are complex, or consist of a set of complex projects with multiple associated interfaces. Sets the organizational climate for the overall effort, establishing strategic direction and political approaches. Provides overall technical insight into the development and management of policies, procedures, and operational schedules. Performs management planning duties such as concept development, master integration planning, and programming design for programs or projects, taking into account feasibility, costs, and economics.

As Deputy Program Manager, the incumbent functions as an integral member of the management team and assists the Associate Director in developing and updating the Program Plan which specifies the plans for execution of all elements of the Program, and organizes, supervises and trains the Program staff which directs the execution of this plan.

Submits initial budget recommendations for the Program or any of its systems and/or subsystems as part of the annual NASA budget preparation and makes revisions on a case-by-case basis as may be required. Develops and recommends financial Operating Plans for the systems assigned to the GSFC.

Develops and initiates Program reports as may be required by NASA or by Program circumstances to keep Program personnel, technical managers, and higher authorities informed of the Program's progress. Ensures that the data resulting from the Program are disseminated in accordance with the Program.

Maintains continuous surveillance of schedule milestones for all project systems and all activities within or outside NASA which may affect the programmed costs, technical reliability,

and completion date of the particular project. Coordinates with resources personnel those items requiring resource support.

Acts for the Associate Director on matters within his or her cognizance and in his or her absence performs as the Associate Director.

Contributes in establishing overall policies and priorities. Is an authoritative source for decisions and guidance. The Associate Director places full reliance on the individual as a management authority in overall program definition, organization, direction and emphasis throughout the development cycle.

Exercises Supervisory and/or Managerial Authorities 25%

Supervises a group of employees performing work at the GS-15 level. Provides administrative and technical supervision necessary for accomplishing the work of the unit. Assigns tasks to subordinates and cognizant groups within the GSFC to ensure successful integration of the spacecraft to the vehicle and of the spacecraft systems.

Performs the administrative and human resource management functions relative to the staff supervised. Establishes guidelines and performance expectations for staff members, which are clearly communicated through the formal employee performance management system. Observes workers' performance; demonstrates and conducts work performance critiques. Provides informal feedback and periodically evaluates employee performance. Resolves informal complaints and grievances. Develops work improvement plans, recommending personnel actions as necessary. Provides advice and counsel to workers related to work and administrative matters. Effects disciplinary measures as appropriate to the authority delegated in this area. Reviews and approves or disapproves leave requests. Assures that subordinates are trained and fully comply with the provisions of the safety regulations.

The incumbent is responsible for furthering the goals of equal employment opportunity (EEO) by taking positive steps to assure the accomplishment of affirmative action objectives and by adhering to nondiscriminatory employment practices in regard to race, color, religion, sex, national origin, age, or handicap. Specifically, incumbent initiates nondiscriminatory practices and affirmative action for the area under his/her supervision in the following: (1) merit promotion of employees and recruitment and hiring of applicants; (2) fair treatment of all employees; (3) encouragement and recognition of employee achievements; (4) career development of employees; and (5) full utilization of their skills.

Advises on, Conducts, and Monitors Technical Managerial Functions 20%

Provides authoritative technical decisions, advice, and consultation on variables and unknowns affecting planning, integration, coordination, and critical management problems. Analyzes, coordinates, and integrates a number of complex program elements into programs that represent a Center-wide/program position. Serves as expert technical management consultant and advisor to subordinate activities in areas such as technology development. Initiates

investigations and risk-management studies to find solutions to critical problems in areas such as resources analysis, technical management systems, technical engineering operations management, and configuration management.

The incumbent maintains surveillance over the Program's systems engineering to ensure a maximum probability that the several systems will satisfactorily perform their part of the Program assignment, and resolves all activities within or outside NASA which may affect the programmed cost, technical reliability, and completion date of the particular Project.

Participates in technical reviews including reviews by Center Management, Headquarters Management, contractors, investigators and foreign governments.

Incumbent must recognize the unique management and technical problems that arise in the development of complex spacecraft systems and devise and execute effective solutions to these problems.

Responsible for the preparation of subsystem and system specifications and for the review of changes and approvals.

Performs reviews of test and evaluation specifications and test results and initiates appropriate corrective action where necessary to improve the reliability of the spacecraft.

Oversees the development of trend analysis, process analyses, control policies, and requirements for the program. Consults on the development of technical resources and business management systems.

Requests special technical information from the appropriate areas of NASA as required.

Provides technical consultation to the launch facility on all aspects of the Program to assure smooth prelaunch operations and a successful launch. Establishes, convenes, and chairs committees and working groups as deemed necessary during the life of the Program such as coordination committees, supporting design review groups, and failure analysis groups.

Responsible for directing instrument developments and interfaces with well known scientific principal investigators throughout the United States including universities, other government agencies and major corporations as well as foreign governments and universities. As such, the incumbent has the responsibility to conduct activities, because he/she is in a decision making role, in a manner that reflects credit upon NASA and the United States.

Performs Contractor Oversight 15%

Integrates and coordinates the efforts of agency personnel with those of contractors in research, development, and engineering. Incumbent has a far-reaching effect on the work and programs of extensive engineering activities.

Provides authoritative technical decisions, advice, and consultation to contractors on variables and unknowns affecting planning, coordination, and critical problems with respect to safety, costs, and economics.

Supports the Associate Director of Flight Programs and Projects in directing contractor efforts for the Program directly for those contractors of supporting organizations. Ensures that the GSFC or other NASA activities maintain appropriate technical monitoring over the quality, timing and work placed with outside contractors or other government agencies. Provides close liaison with, and assistance to, procurement officials in their negotiation and administration of contractors for the Program.

Serves as the Performance Evaluation Board Chairperson for major contract efforts.

Performs Engineering Project Planning Duties 10%

Serves as an expert consultant in planning, monitoring, and administering projects of national or international significance characterized by a constantly and sometimes greatly changing physical environment, critical problems, or other similar variables and unknowns. Provides overall technical insight into the development and management of policies, procedures, and operational schedules necessary for new and on-going systems and functions in areas of space science or measurement and instrumentation systems. Performs pre-project planning duties, such as concept development, master integration planning, operations planning, and programming design for projects, taking into account feasibility, costs, and performance.

OTHER SIGNIFICANT FACTS:

In order to qualify for this position, incumbent must possess a bachelor's degree appropriate to the position.

Factor 1- 9 Knowledge Required by the Position

Bachelor's degree in an appropriate field of engineering, physical science, or mathematics.

Professional knowledge of and ability to apply engineering disciplines of space flight technology in development and operating spacecraft and instrument systems including subsystems such as thermal, structural, power, communications, data handling, control and guidance.

Knowledge of and experience in all phases of project management including but not limited to project-wide planning and evaluation, systems safety, systems tests, configuration management, systems integration tests, reliability and quality assurance, spacecraft compatibility with launch vehicles, integrity of spacecraft to meet mission requirements,

scheduling, health and safety, budgetary and financial planning, technical direction and monitoring of contracts, and Project reporting.

Ability to manage the various elements and groups required to effect a complete spacecraft project.

Knowledge of government and Agency contractual and funding rules, regulations, relationships and administrative processes involved in developing and procuring hardware, research studies, and engineering services.

Ability to communicate well both orally and in writing.

Factor 2- 5 Supervisory Controls

Reports administratively to the Associate Director of a Program within the Flight Programs and Projects Directorate.

Guidance and review of all work by higher levels is generally restricted to matters of broad objectives and budget limitations.

The Deputy Program Manager's decisions and commitments are accepted as final even though the approval may depend upon formal action by others.

Factor 3- 5 Guidelines

Guidelines are broadly stated and nonspecific, e.g., broad policy statements, program directions which require extensive interpretation. Incumbent is responsible for developing Program Plan submitting budget recommendations, maintaining schedules, preparation of systems and subsystems specifications. The incumbent is the second-senior line official responsible for execution of the Program with Headquarters and Center prescribed guidelines and control. Must use considerable judgment and ingenuity in interpreting the intent of guides which do exist, developing recommendations to higher levels of management, and interpreting and implementing application of broad objectives for technical and administrative aspects of the Project.

Factor 4- 6 Complexity

The incumbent will assist in organizing, leading, directing and controlling all elements of project management: project planning, implementation, instrument selection to launch and postlaunch activities, and for advance planning activities throughout the lifetime of the Project.

The work consists of broad functions and processes including all aspects of project management both technical and administrative. Several phases such as instrument

development, advance instrument development, instrument maintenance, spacecraft design are pursued concurrently with project, collocated support, and contractor employees.

The incumbent is responsible for managing groups of technical and administrative personnel who are themselves considered experts and authorities within their field. Decisions are based on studies, analyses, and evaluation of technological/program changes, advancements and budget plans.

Problems encountered by the incumbent encompass the full range of project management responsibilities-technical, scientific, and administrative.

Factor 5- 6 Scope and Effect

The work involves planning, developing, managing, and implementing all aspects of a flight project which is of vital importance to the Agency's goals.

The Program staff consists of approximately 100 civil service personnel and many contractors.

Factor 6- 4 Personal Contacts

The extensive scope of project management necessitates direct contact with key officials, top engineers, and scientific personnel of NASA, other U.S. government agencies, foreign government agencies, universities, and private contractors.

Factor 7- 4 Purpose of Contacts

The purpose is to justify, negotiate and settle matters involving significant or controversial technical, scientific, and administrative issues. It involves active participation in conferences, meetings, and issues of importance. These issues are usually varying and controversial requiring the incumbent to achieve satisfactory results with no impact to objectives of the Program.

Factor 8- 1 Physical Demands

The work is normally performed in a typical office setting. The incumbent will be expected to attend meetings where he must be attentive and sit for long-periods of time. He/she will also be involved with prelaunch and launch activities which may require working in a controlled environment, wearing special clothing, stooping, bending, and in some instances climbing.

Factor 9- 1 Work Environment

The incumbent primarily works in a typical office setting (meeting rooms, conference rooms, etc.). Travel by air and auto is an element of this position.

SUPERVISORY FACTORS:

Factor 1- 4 Program Scope and Effect

Directs a segment of a professional, highly technical, or complex administrative program which involves the development of major aspects of key agency scientific, medical, legal, administrative, regulatory, policy development or comparable, highly technical programs; or that includes major, highly technical operations at the Government's largest most complex industrial installations. Impacts an agency's headquarters operations, several bureau-wide programs, or most of an agency's entire field establishment; or facilitates the agency's accomplishment of its primary mission or programs of national significance; or impacts large segments of the Nation's population or segments of one or a few large industries; or receives frequent or continuing congressional or media attention.

Factor 2- 3 Organizational Setting

The position is accountable to a position that is SES level, or equivalent or higher level; or to a position which directs a substantial GS-15 or equivalent level workload; or to a position which directs work through GS-15 or equivalent subordinate supervisors, officers, contractors, or others.

Factor 3- 3 Supervisory/Managerial Authority Exercised

Exercises delegated managerial authority to set a series of annual, multi-year, or similar types of long-range work plans and schedules for in-service or contracted work. Assures implementation (by lower and subordinate organizational units or others) of the goals and objectives for the program segment(s) or function(s) they oversee. Determines goals and objectives that need additional emphasis; determine the best approach or solution for resolving budget shortages; and plan for long range staffing needs, including such matters as whether to contract out work. Works closely with high level program officials (or comparable agency level staff personnel) in the development of overall goals and objectives for assigned staff function(s), program(s), or program segment(s).

Factor 4A- 4 Nature of Contacts

Contacts may take place in meetings, conferences, briefings, speeches, presentations, or oversight hearings and may require extemporaneous response to unexpected or hostile questioning. Preparation typically includes briefing packages or similar presentation materials, requires extensive analytical input by the employee and subordinates, and/or involves the assistance of a support staff. Frequent contacts are comparable to any of the following:

- Influential individuals or organized groups from outside the employing agency, such as executive level contracting and other officials of major defense contractors or national officers of employee organizations;

- Regional or national officers or comparable representatives of trade associations, public action groups, or professional organizations of national stature;

- Key staff of congressional committees, and principal assistant to senators and representatives;

- Elected or appointed representatives of State and local governments;

- Journalists of major metropolitan, regional, or national newspapers, magazines, television, or radio media;

- SES, or Executive Level heads of bureaus and higher level organizations in other Federal agencies.

Factor 4B- 4 Purpose of Contacts

The purpose is to influence, motivate, or persuade persons or groups to accept opinions or take actions related to advancing the fundamental goals and objectives of the program or segments directed, or involving the commitment or distribution of major resources, when intense opposition or resistance is encountered due to significant organizational or philosophical conflict, competing objectives, major resource limitations or reductions, or comparable issues. Persons contacted are sufficiently fearful, skeptical, or uncooperative that highly developed communication, negotiation, conflict resolution, leadership, and similar skills must be used to obtain the desired results.

Factor 5- 8 Difficulty of Typical Work Directed

The highest graded non-supervisory work directed, which requires at least 25% of this position's duty time, is GS-13 or higher, or equivalent.

Factor 6- 6 Other Conditions

Supervision and oversight involves exceptional coordination and integration of a number of very important and complex program segments or programs of professional, scientific, technical, managerial, or administrative work comparable in difficulty to GS-13 or higher level. Supervision and resource management involves major decisions and actions that have a direct and substantial effect on the organizations and programs managed.